

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently amended) A voltage generator comprising:

a detector for comparing an output voltage of the voltage generator with a first reference voltage to output a first sensing signal and comparing the output voltage of the voltage generator with a second reference voltage lower than the first reference voltage to output a second sensing signal;

a controller controlled by an action signal for outputting a first control signal and a second control signal in response to the first sensing signal and the second sensing signal, respectively;

a sub-booster for boosting [[a]] the output voltage in response to the first control signal;

a main booster for boosting [[a]] the output voltage in response to the second control signal; and

a voltage adder for adding output signals from the sub-booster and the main booster to provide the output voltage,

wherein the controller comprises:

an action detector for combining the first sensing signal and the second sensing signal, and the action signal to generate an output signal;

a latch for latching the output signal from the action detector; and

a sub-controller for receiving an output signal from the latch and the action signal to output the first control signal and the second control signal.

2. (Original) The voltage generator according to claim 1, wherein the detector comprises:

a sensing voltage generator for dividing the output voltage to generate a first sensing voltage and a second sensing voltage lower than the first sensing voltage;

a first comparator for comparing the first sensing voltage and the first reference voltage to output the first sensing signal; and

a second comparator for comparing the second sensing voltage and the second reference voltage to output the second sensing signal.

3. (Cancelled).

4. (Currently amended) The voltage generator according to claim [[3]] 1, wherein the sub-controller comprises:

a plurality of pulse generating blocks, each of which outputs a pulse in response to the action signal and the output signal from the latch; and

a multiplexer for selecting one pulse among a plurality of pulses in response to the action signal to output the one pulse as the first control signal and the second control signal.

5. (Original) The voltage generator according to claim 4, wherein the pulse generating block comprises:

a first operating means for performing a NAND operation on the output signal from the latch and the action signal;

an delay circuit for delaying an output signal from the first operating means for a predetermined time according to the action signal; and

a second operating means for performing a NAND operation on the output signal from the first operating means and an output signal from the delay circuit to provide an output.

6. (Original) The voltage generator according to claim 1, wherein the main booster comprises:

an oscillator for outputting an oscillating signal in response to the second control signal;

a control driver for decoding the oscillating signal to output a plurality of capacitor precharge signals and a plurality of charge transport signals; and

a pump circuit for charging capacitors in response to the plurality of capacitor precharge signals and pumping charges stored in the capacitors in response to the plurality of charge transport signals to boost the output voltage.

7. (Currently amended) The voltage generator according to claim 1, wherein the sub-booster comprises:

an oscillator for outputting an oscillating signal in response to the second control signal;

a control driver for decoding the oscillating signal to output a plurality of capacitor ~~precharge~~ precharge signals and a plurality of charge transport signals; and

a pump circuit for charging capacitors in response to the plurality of capacitor precharge signals and pumping charges stored in the capacitors in response to the plurality of charge transport signals to boost the output voltage.

8. (Original) The voltage generator according to claim 1, wherein the detector further compares the output voltage with a third reference voltage greater than the first reference voltage to output a third sensing signal, and

the controller further receives the third sensing signal and the action signal to output a third control signal,

further comprising a second sub-booster for boosting a voltage in response to the third control signal, and wherein the voltage adder adds output signals from the sub-booster, the second sub-booster and the main booster to provide the output voltage.

9. (Currently amended) A voltage generator comprising:
means for comparing an output voltage of the voltage generator with a first reference voltage to output a first sensing signal and comparing the output voltage of

the voltage generator with a second reference voltage lower than the first reference voltage to output a second sensing signal;

means controlled by an action signal for outputting a first control signal and a second control signal in response to the first sensing signal and the second sensing signal, respectively;

means for boosting the output voltage in response to the first control signal;

means for boosting the output voltage in response to the second control signal;

and

means for adding output signals from the sub-booster and the main booster to provide the output voltage,

wherein the means for outputting further comprises:

means for combining the first sensing signal, the second sensing signal, and the action signal to generate an output signal;

means for latching the output signal from the means for combining; and

means for receiving an output signal from the means for latching and the action signal to output the first control signal and the second control signal.

10. (Original) The voltage generator according to claim 9, wherein the means for comparing further comprises:

means for dividing the output voltage to generate a first sensing voltage and a second sensing voltage lower than the first sensing voltage;

means for comparing the first sensing voltage and the first reference voltage to output the first sensing signal; and

means for comparing the second sensing voltage and the second reference voltage to output the second sensing signal.

11. (Cancelled).

12. (Currently amended) The voltage generator according to claim [[11]]
9, wherein the means for receiving an output signal from the latch and the action signal
further comprises:

means for generating a plurality of pulses each in response to the action signal
and the output signal from the latch; and

means for selecting one pulse among a plurality of pulses in response to the
action signal to output the one pulse as the first control signal and the second control
signal.

13. (Original) The voltage generator according to claim 12, wherein the
means for generating a plurality of pulses further comprises:

first operating means for performing a NAND operation on the output signal from
the latch and the action signal to generate an output signal;

means for delaying an output signal from the first operating means for a
predetermined time according to the action signal to generate an output signal; and

second operating means for performing a NAND operation on the output signal
from the first operating means and the output signal from the means for delaying.

14. (Original) The voltage generator according to claim 9, wherein the
means for boosting a voltage in response to the second control signal further
comprises:

means for outputting an oscillating signal in response to the second control
signal;

means for decoding the oscillating signal to output a plurality of capacitor
precharge signals and a plurality of charge transport signals; and

means for charging charges capacitors in response to the plurality of capacitor
precharge signals and pumping charges stored in the capacitors in response to the
plurality of charge transport signals to boost the output voltage.

15. (Currently amended) The voltage generator according to claim 9, wherein the means for boosting ~~[[a]]~~ the output voltage in response to the first control signal ~~further~~ comprises:

means for outputting an oscillating signal in response to the second control signal;

means for decoding the oscillating signal to output a plurality of capacitor ~~precharge~~ precharge signals and a plurality of charge transport signals; and

means for charging charges capacitors in response to the plurality of capacitor precharge signals and pumping charges stored in the capacitors in response to the plurality of charge transport signals to boost the output voltage.

Claims 16 – 20 (Cancelled).